Perhaps the ability of some lizards to produce sounds such as I have here described may not be new to some of your readers.

1, Burlington Road, W., October 31 FRANCIS P. PASCOE

SEALS IN LAKE BAIKAL.—A. H. Keane wishes to know what authority there is for the statement made by E. Réclus ("Géographie Universelle," vi. 741) that seals outwardly resembling the *Phoca fœtida* of Spitzbergen are found in Lake Baikal; also what theories have been advanced to explain the presence of these Cetaceans in a freshwater lake over 1300 feet above sea-level.

NAPLES ZOOLOGICAL STATION.—For the terms on which permission can be obtained to work at the Naples Zoological Station, W. B. should write to Dr. Anton Dohrn, Stazione Zoologica, Naples.

MELAPTERURUS ELECTRICUS.—Keep it in an aquarium of fresh water, not too cold.

REV. J. F. T.—See the notice prefixed to our Correspondence Columns.

CHARLES W. HARDING.—You should communicate with the widow.

## *SEA FROTH*

IN a letter written by my nephew, Mr. Ernest Gladstone of Aberdeen, describing the recent storms, he says: "When we got within a quarter of a mile of the sea we were astonished to see great flocks of foam, like snowballs, flying in all directions. A little further on we came to one of the large hollows in the links, and we saw a sight none of us had seen before; for the whole hollow, about 100 yards long and 50 broad, was one sea of slimy foam, of which a great part must have been about 10 feet deep. This was tossing up and down as if it were the sea itself. The waves of water broke far out at sea, but great rollers of foam kept rolling in towards the links, making it impossible to come near the sea without wading up to your waist in foam for nearly a quarter of a mile, and occasionally meeting a foam-wave up to your neck."

There is nothing unusual in this phenomenon, except the large scale upon which it took place. Almost every visitor to the seaside during rough weather must have observed the formation of a persistent sea froth, which is often carried great distances by the wind. The account, however, recalled to my memory some observations on the cause of the phenomenon which I made last year at Ilfracombe.

The white foam of a breaking wave, under ordinary circumstances, disappears almost as quickly as the small bubbles of entangled air can rise through the water and burst at the surface. It occurred to me that there must be something dissolved in the sea water which gave rise to the formation of the more persistent froth, and the broken and bruised sea-weed suggested itself to my mind as a probable source of such a substance. A quantity of it was therefore gathered, allowed to stand for several hours, till in fact it had run down to a liquid, and then filtered from the dirt and organic *débris* with which it was mixed. The clear water thus obtained gave a persistent froth, like that of beer, whenever it was shaken, and I subsequently found that it contained a considerable amount of organic matter. There was no distinct indication of anything albuminous.

In order to ascertain whether this property was due to broken sea-weed, two bottles were filled with ordinary sea water. Into one of these was put freshly-torn pieces of those kinds of fucus and other marine plants which were found growing between high and low water-mark, and in the other were placed strips of healthy laminaria freshly gathered from the lower zone. The bottles were violently shaken for a few minutes. The first gave a foam which quickly disappeared, while the second produced a froth which would remain more than twenty-four hours before all the bubbles broke. It may be observed in passing that this sea-froth, whether naturally or artificially prepared, becomes very iridescent on standing.

It seems fair to conclude, therefore, that the formation of this persistent froth is due to the destruction of the sea-weed—not of that which is tossed about by every tide, but of the laminaria which is uprooted and torn by the waves only when the violent agitation of the sea reaches a sufficient depth. J. H. GLADSTONE

## *OUR WINTER REFUGES—VENTNOR*

IT is now upwards of half a century since Sir James Clark's classic work "On the Influence of Climate" in the prevention and cure of chronic diseases appeared, and among the more important results which followed its publication was the establishment of stations in this and other countries for meteorological observations, by which alone the climates of various sanatoria might be accurately compared. To Sir James is due to a great extent the merit of having placed the investigation of this important department of practical meteorology on a sound basis.

The late Dr. Martin of Ventnor was one of the most intelligent and active of the co-operating band of observers whose services were enlisted in the inquiry. A valuable series of observations was begun by him in the end of 1839, in establishing which Mr. Glaisher kindly gave his assistance and advice. The observations have since been carried on uninterruptedly, and they are evidently, particularly those of temperature and rainfall, of such a quality as quite to meet the objects aimed at. The results are presented and summarised in a just-published volume[1] by Dr. Whitehead with ability, in their bearings on the climatology of Ventnor.

The Isle of Wight occupies a high place as a favourable and commodious residence throughout the year for a large class of invalids, owing to the variety which it presents in point of elevation, soil, and aspect, and to the configuration of its hills and shores, which give distinctive climatic peculiarities to certain districts, notably to the Undercliff. These peculiarities are of no inconsiderable value in the treatment of those diseases which require a mild, equable temperature, a comparatively small rainfall, and protection from certain noxious winds.

The Undercliff extends for nearly seven miles from Bonchurch to Blackgang, with an average breadth of a third of a mile, and is completely sheltered from the north-east, north, north-west, and west winds of the Uppercliff—a range of lofty downs of chalk and sandstone which rise boldly behind the successive terraces in elevations varying from 400 to 600 feet. Since the Undercliff terminates in an unbroken perpendicular seacliff from 60 to 80 feet in height along its whole extent, the situation is not close or confined, but open and airy, and affords, besides, certain material advantages in the mitigation of sea fogs and low night temperatures. The broad belt of the Solent and Spithead separating the Isle of Wight from the mainland, and the position of the Undercliff in the extreme south of the island, considered with reference to the prevailing winds of the Channel, are also important factors in the climate of the district.

In more recent years several other meteorological stations have been established in other parts of the island and on the adjacent coast of Hampshire, from the observations of which a comparison may be made of the climatologies of this part of the South of England.

On an average of the last twenty-one years the annual rainfall of Ventnor was 30·00 inches, being all but identical with that of Osborne and Bournemouth. The amount rises successively at Hurst Castle, Ryde, and Newport, the rainfall at the last place being 34·20 inches,

[1] "The Climate of the Undercliff, Isle of Wight, as Deduced from Forty Years' Consecutive Meteorological Observations," by J. L. Whitehead, M.D.

or fully four inches in excess of Ventnor. While the rainfall of the comparatively low-lying coasts of the Isle of Wight and Hants is about 30·00 inches, the amount along the coast from Selsey Bill eastward as far as Folkestone is two inches less, but on the coast of Devon, from Lyme Regis to Start Point, it rises to from 33·0 to 37·6 inches—figures of some importance in their relations to the sanataria of these coasts.

One of the most interesting results disclosed by these forty years' observations is the successive gradual increase of the rainfall decade by decade, the means being respectively, beginning with the decade 1840-49, 25·72, 28·45, 29·16, and 31·11 inches. This feature of the rainfall holds also in several other districts of the United Kingdom; whereas on the other hand other districts present a very different distribution during these forty years, that of some districts being just the reverse of Ventnor. The mean rainfall of Ventnor for the twenty years ending 1859 being 27·08 inches, and for the twenty years ending 1879 being 30·14 inches, points to the necessity there is that care be taken to employ the same terms of years in comparing the rainfall of different districts.

The mean temperature for the forty years is 51°·6; the coldest month being January, 41°·9, and the warmest August, 62°·7. As January may be taken to represent the coldest months of the year, or the season when the climate of the Undercliff affords the greatest advantages to invalids, the following comparison of its temperature with that of other places in the South of England may be stated:—It exceeds the temperature of Sidmouth by 0°·2; Bournemouth by 0°·6; Osborne by 1°·2; and Folkestone, Eastbourne, Brighton, and Clifton by 1°·7; but on the other hand its January temperature is lower than that of Torquay by 1°·1; the extreme south-west of Cornwall by 2°·6; and Scilly by 4°·4. In this connection it is to be noted, as already pointed out, that along the coast to eastward the rainfall is less, and the climate therefore somewhat dryer; and to westward the rainfall is larger and the climate therefore wetter; and this latter remark applies with increased force as respects all places to the westward of Prawle Point.

The climatic advantages of the Undercliff, due to its southern insular position and distance eastward from the Land's End, by which the force of the west-south-west winds are much weakened before arriving there, are perhaps most apparent on examining the columns of minimum night temperatures. In this remark we refer to the general teaching of the figures, which indicate a remarkable protection against the inroads of low temperatures, with their malignant influence as respects a large class of invalids; and not to such singular temperature phenomena as the occurrence of 17°·0 on January 22 last, during the great snowstorm of that period, for if great or exclusive weight be given to such temperatures the winter climate of the Undercliff must yield to that of many insular situations in the north-west of Scotland.

As compared with London the mean temperature of the Undercliff is 2°·4 less in July, 0°·8 in August; but in September it is 0°·7, and in October 2°·2 higher. In other words the heat of summer is greatly mitigated on the south shores of the Isle of Wight, and prolonged further into the autumn months, thus greatly extending the time during which invalids might sit out in the open air with impunity.

Dr. Whitehead's book is handsomely bound, carefully got up and printed, and the tables are introduced to the reader by a well-written and sensible preface. When the work, however, passes into a second edition, one or two improvements might be introduced. A table of monthly mean temperatures of the several years might be given similar to that of the rainfall on pp. 29, 30. In this edition no mean temperatures of the months are included, and to ascertain these the whole of the temperatures must be copied out from pp. 8 to 23, and the averages struck. The table of monthly barometric means requires careful revision, several of them showing transposed and inverted figures, while a few others require to be compared with the original observations from which they are calculated—transpositions and inversions of figures not being so readily seen in barometric as in thermometric and rainfall averages. The work, however, is an exceedingly valuable addition towards a correct knowledge of the climatologies of the South of England, which holds out to invalids the best winter refuges of the British Islands.

## *INTERNATIONAL GEOLOGICAL CONGRESS*

THE second session of the International Geological Congress was recently held at Bologna, commencing on Monday, September 26. About 200 geologists were present, but only eight of them represented the English-speaking nations. These were: Prof. James Hall (representing the United States), Dr. T. Sterry Hunt (Canada), W. T. Blanford (Geological Survey of India), W. Topley (Geological Survey of England), Prof. T. McK. Hughes, J. A. Phillips, E. B. Tawney, and Col. Tabuteau.

The arrangements made for the Congress were admirable in every respect, thanks to the energy and forethought of Prof. Capellini and M. Giordano.

The first session of the Congress was held at Paris in 1878. At that meeting certain geologists were nominated to organise committees in each country to discuss and report upon the various questions requiring attention. These are classed in three main divisions: (1) the unification of geological nomenclature (of this committee Prof. Hughes was nominated president for England); (2) the unification of colours, signs, &c., employed in geological maps and sections (of this Prof. Ramsay was nominated president for England); (3) nomenclature of species; on this subject no action has been taken in England. Prof. Hughes' committee has been for some time at work, and notices of its progress have at various times appeared in this journal. The Committee on Geological Maps was started in England much later, but a report of its work was read at the York meeting of the British Association. At that meeting the Association gave a grant of 25*l.* in aid of the proposed International Map of Europe.

Some preliminary meetings were held at Bologna on Sunday, September 25, but the real work of the week commenced next day, when the Congress was formally received by the Syndic and Municipality of Bologna. At the opening meeting the chair was occupied by M. Berti, Minister of Agriculture and Commerce, who had been deputed to represent the King. The chairman was supported by M. Q. Sella, honorary president, and M. Ed. Hebert, ex-president. The bureau was formed as follows:—President: Prof. Capellini; Vice-presidents, representing various nations, amongst them—J. Hall (United States), Sterry Hunt (Canada), W. T. Blanford (India), Prof. Hughes (Great Britain), Prof. Daubrée (France), Prof. Torell (Sweden), &c.; General Secretary: F. Giordano; Secretaries: Bornemann, Delaire, Fontannes, Pelar, Taramelli, Topley, Uzielli, and Zezi. The Congress had offered prizes for the best essays upon the colouring, &c., of maps. These were awarded to MM. Heim of Zürich, Carpinski of St. Petersburg, Maillard of Lausanne.

At the conclusion of this meeting the Congress adjourned to the excellent new Geological Museum which has been formed under the direction of Prof. Capellini. The Via Zamboni, in which the Museum is situated, was lined by representatives of all the ancient trade guilds of Bologna, each with its banner. M. Sella took especial pains to explain to the American and English visitors the history and present position of these interesting old societies.

The first sittings of the Congress were devoted to a